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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,551	01/29/2004	Robert L. Cafferata	B0410/7273D1	5081

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EXAMINER

BOLDA, ERIC L

ART UNIT PAPER NUMBER

3663

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/767,551	CAFFERATA, ROBERT L.	
	Examiner	Art Unit	
	Eric Boldt	3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10,12-14,16,17,19-21,23,25-32 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10,12-14,16,17,19-21,23,25-32 and 34-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is responsive to Applicant's amendment of March 1, 2006.

### ***Drawings***

2. The drawings (replacement Fig. 1) were received on March 1, 2006. These drawings are accepted.

### ***Specification***

3. The amendment to the Specification was received on March 1, 2006. The 35 U.S.C. 112 , first paragraph objection is withdrawn.

### ***Response to Arguments***

4. Applicant's arguments regarding 35 U.S.C. 112 , first paragraph and second paragraph rejection of claims 1-3, 5-10, 12-14, 16-17, 19, 21, 23, 25-32 and 34-36, and 35 U.S.C. 112 second paragraph rejection of claims 1-33 have been considered and are persuasive.

Applicant's argument regarding 35 U.S.C. 102(b) rejection of claims 1-36 have been considered but is not persuasive. Applicant argues (Argument A) that Kim describes controlling the *active* (amplifying) layer to control TE gain and TM gain, whereas the applicant's describe selecting the thickness of the *residual cladding* layer to control TE gain and TM gain.

The Kim reference shows in Fig. 2 that not only the active waveguide layer (30), but also the upper waveguide layer (40), has different controlled thicknesses along the TE and TM areas. This upper waveguide layer, along with the lower layer (20), is a

cladding of the active waveguide layer. The fact that the active waveguide thickness is also varied does not distinguish the prior art from what the Applicant has claimed (note that claims are written in open-ended language, e. g. "comprising").

***Claim Rejections - 35 USC § 102***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-3, 5-10, 12-14, 16, 17, 19-21, 23, 25-32, 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al.

With regard to claims 1, 12, 23 and 34, Kim discloses in Fig. 2 a semiconductor amplifier comprising a substrate (60), a first gain section (72) disposed on the substrate, and a second gain section (71) disposed on the substrate. As is evident from the figure, the residual cladding layer (40) disposed above the gain sections has a different thicknesses over the first and second gain sections. The light incident on the first gain section is amplified in the TE mode while the light incident on the second gain section is amplified in the TM mode (cf. paragraph [0022]).

With regard to claims 2, 13, 25, and 35, the gain sections are fabricated using bulk semiconductor (paragraph [0026]).

With regard to claims 3, 14, 26, and 36 the first and second gain sections have substantially the same length as shown in Fig. 2. The drive current is controllable such that the same current is received in each gain section.

With regard to claims 5,6, 16, 17, 27 and 28, the first thickness is less than the second thickness.

With regard to claims 7 and 29 the boundary between the gain sections is configured to reduce reflections, e. g. by the gradual change in thickness of (30) between the two sections.

With regard to claims 8, 9, 19, 20, 30 and 31, the first and second sections are connected by a waveguide.

With regard to claims 10, 21 and 32, the overall gain is made independent of polarization of the input light (paragraph [0029]).

Note that the citations made herein are done so for the convenience of the applicant; they are in no way intended to be limiting. The prior art should be considered in its entirety.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric Bolda whose telephone number is 571-272-8104. The examiner can normally be reached on M-F from 8:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Jack Keith, can be reached on 571-272-6878. Please note the fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EB

Eric Bolda

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER